

IN THE CLAIMS:

1. (Currently Amended) A syringe comprising:

a body; and

a plunger movably disposed within the body, the plunger comprising:

a cylindrical wall extending in a longitudinal direction and having a circumferentially continuous inner surface and an outer surface, the inner surface defining a retaining shoulder formed in a radial direction and extending along the circumference of the cylindrical wall; and

a plurality of inwardly projecting flanges fixedly disposed on and radially spaced along the circumferentially continuous inner surface of the cylindrical wall, the plurality of inwardly projecting flanges extending a length in a longitudinal direction proximal to the retaining shoulder and are fixedly connected along the length to the cylindrical wall,

wherein the inwardly projecting flanges are continuously supported in the longitudinal direction by the circumferentially continuous inner surface of the cylindrical wall,

wherein the outer surface is defined by a wall that is planar in axial and annular directions.

2-10. (Cancelled)

11. (Currently Amended) The fluid injection system of Claim 13 wherein the plurality of inwardly projecting flanges are radially spaced along the circumferentially continuous inner surface of the cylindrical wall ~~and extend in a longitudinal direction proximal to the retaining shoulder.~~

12. (Previously Presented) The syringe of Claim 1 wherein the plurality of flanges are evenly spaced along the cylindrical wall.

13. (Currently Amended) A fluid injection system comprising:
an injector comprising:
a housing; and
a drive member at least partially disposed within the housing, the drive member comprising:
at least one retaining member; and
one or more outwardly extending flange members; and
a syringe comprising:
a body; and
a plunger movably disposed within the body, the plunger comprising:
a cylindrical wall having an inner surface defining a retaining shoulder extending radially inward and formed along an axial length thereof,
wherein the inner surface is circumferentially continuous; and
a plurality of inwardly projecting flanges fixedly extending from the retaining shoulder and continuously supported by the inner surface in a longitudinal direction,
wherein each of the inwardly projecting flanges is spaced along the inner surface of the cylindrical wall;
wherein the at least one retaining member on the drive member of the injector is adapted to engage the retaining shoulder on the cylindrical plunger wall to enable the drive member to retract the plunger within the body of the syringe; and
wherein the plurality of inwardly projecting flanges on the cylindrical plunger wall are adapted to engage the one or more outwardly extending flange members on the drive member when the syringe body is rotated about its longitudinal axis, the one or more outwardly extending flange members operable to cause the at least one retaining member on the drive member to disengage the retaining shoulder on the cylindrical wall of the plunger upon rotation of the syringe body.

14-15. (Cancelled)

16. (Previously Presented) The fluid injection system of Claim 13 wherein the plurality of flanges are evenly spaced along the inner surface of the cylindrical wall.

17-21. (Cancelled)

22. (Previously Presented) The fluid injection system of Claim 1 wherein the plurality of inwardly projecting flanges project radially and terminate a distance radially inward from the circumferentially continuous inner surface.

23. (Previously Presented) The fluid injection system of Claim 1 wherein the inwardly projecting flanges terminate at an axial position and are rigidly supported in the radial direction by the inner surface at the axial position.

24. (Previously Presented) The fluid injection system of Claim 1 wherein the inwardly projecting flanges extend radially at least to an inner most radial position of the retaining shoulder.

25. (Currently Amended) A syringe comprising:

a body; and

a plunger movably disposed within the body, the plunger comprising:

a cylindrical wall having a continuous inner surface and an outer surface, the inner surface defining a retaining shoulder formed and extending along the circumference of the cylindrical wall; and

a plurality of inwardly projecting flanges extending radially inward from the continuous inner surface and having a proximal end and a distal end,

wherein the distal end connects to the retaining shoulder and the proximal end connects to the cylindrical wall,

wherein the outer surface is defined by a wall that is planar in axial and annular directions.

26. (Previously Presented) The syringe of Claim 25 wherein the inwardly projecting flanges are continuously supported in the longitudinal direction by the inner surface of the cylindrical wall.
27. (Previously Presented) The syringe of Claim 1 wherein the plurality of inwardly projecting flanges extend inwardly a length to decrease a diameter formed by the circumferentially continuous inner surface.
28. (Previously Presented) The syringe of Claim 25 wherein the plurality of inwardly projecting flanges extend inwardly a length to decrease a diameter formed by the circumferentially continuous inner surface.